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EXAMINER

LIANG, REGINA

ART UNIT	PAPER NUMBER
2674	

DATE MAILED: 06/25/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary**Application No.**

09/904,246

Applicant(s)

PALANISAMY, PONNUSAMY

Examiner

Regina Liang

Art Unit

2674

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on ____.

2a) This action is **FINAL**. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-18 is/are pending in the application.

4a) Of the above claim(s) ____ is/are withdrawn from consideration.

5) Claim(s) ____ is/are allowed.

6) Claim(s) 1-18 is/are rejected.

7) Claim(s) ____ is/are objected to.

8) Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on ____ is/are: a) accepted or b) objected to by the Examiner.

 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on ____ is: a) approved b) disapproved by the Examiner.

 If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some * c) None of:

 1. Certified copies of the priority documents have been received.

 2. Certified copies of the priority documents have been received in Application No. ____.

 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

 a) The translation of the foreign language provisional application has been received.

15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.

4) Interview Summary (PTO-413) Paper No(s). ____.

5) Notice of Informal Patent Application (PTO-152)

6) Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claim 1 is rejected under 35 U.S.C. 102(e) as being anticipated by Oka et al (US. PAT. NO. 6,265,986 hereinafter Oka).

As to claim 1, Figs. 1-2 of Oka teaches a display comprising a circuit board (driving circuit part 23), a display panel (1) electrically coupled to the circuit board in face-to-face abutment substantially along a plane, and an electrical connection including a first contact (driving device-side electrode terminals 22) on the circuit board, a second contact (display device-side electrode terminals 13) on the display panel, and a conductor coupling the first and second contacts and extending generally along the plane as claimed (see col. 3, line 44 to col. 4, line 27).

3. Claims 11, 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Utsugi et al (US. PAT. NO. 5,670,792 hereinafter Utsugi).

Figs. 3-5 of Utsugi discloses a display panel, comprising a substrate, row and column electrodes formed on the substrate (scan and signal electrode lines), a plurality of contacts (first contact hole 56A and contact hole) formed between adjacent row electrodes (scan electrode line), a first set of contacts (contact hole) electrically coupled to the row electrodes (scan electrode line) and a second set of the contacts (first contact hole 56A) electrically coupled to the column electrodes (signal electrode line), and the contact pads being aligned in the space between two adjacent column electrodes (between signal lines 1_M , 1_{M+1}), extending generally parallel to the length of the column electrodes as claimed.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 2-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oka in view of Wachtler et al (US. PAT. NO. 6,274,391 hereinafter Wachtler).

As to claims 2, 3, Oka does not disclose the electrical connection is a surface mount connection including solder balls. However, Wachtler teaches it is well known in the art to use solder balls couple to the contact pads on the circuit board to provide direct electrical and

mechanical attachment means to other system hardware (for example see Fig. 7, and col. 6, lines 57-60). Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Oka to have the electrical connection including solder balls as taught by Wachtler so as to provide direct electrical and mechanical attachment means to display device.

As to claim 4, col. 6, line 60 to col. 7, line 28 of Oka teaches the display panel including column electrodes (substrate lines 33 or 34 on substrate 31 or 32) and the conductor including a metallization coupled to the second contact (13) on the display panel, and extending to a third contact (a conductor onto the through-holes) which contacts a column electrode.

As to claim 5, Oka teaches the column electrode is formed at least in part of indium tin oxide (col. 5, lines 43-48).

6. Claims 6, 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oka and Wachtler as applied to claim 5 above, and further in view of Kawano et al (US. PUB. NO. 2002/0054037 hereinafter Kawano).

As to claim 6, Oka as modified by Wachtler does not disclose the display including a plurality of redundant third contacts to the column electrode. However, Kawano teaches the display panel including a plurality of redundant wires goes through the contact holes (42) to contacts to the column electrodes (see Figs. 1-3 and page 4, section [0059]). Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the display panel of Oka as modified by Wachtler to include a plurality of redundant third contacts to

the column electrode taught by Kawano so as to prevent short-circuiting between pixel electrodes.

As to claim 7, Figs. 11(A) to 11(c) of Oka teaches a plurality of second contacts aligned in a column parallel to the column electrode.

7. Claims 10-14, 17, 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oka in view of Kawano.

As to claims 10, 11, 17, Oka discloses forming an electrical contact pad on a display panel, forming row and column electrodes on the display panel. Oka also discloses electrically coupling a first contact pad to a row electrode and electrically coupling a second contact pad to a column electrode (Fig. 6, col. 6, line 60 to col. 7, line 28). Oka does not disclose the contact pads being aligned in the space between two adjacent column electrodes, extending generally parallel to the length of the column electrodes. However, Fig. 1 of Kawano teaches the contact pads (41) being placed in the pixel area and being aligned in the space between two adjacent column electrode (signal lines), extending generally parallel to the length of the column electrodes. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Oka to have contact pads being aligned in the space between two adjacent column electrode as taught by Kawano since the contact pads being placed within the pixel area for electrical connecting the column and row electrodes which will provide thin and light-weighted flat panel display.

As to claims 12, Oka teaches using metallizations to electrically couple the pads to the electrodes.

As to claims 13, 18, Oka and Kawano teaches the row and column electrodes are formed of indium tin oxide. Kawano teaches the display panel including a plurality of redundant wires goes through the contact holes (42) to contacts to the column electrodes (see Figs. 1-3 and page 4, section [0059]).

As to claim 14, Fig. 6 of Oka teaches the electrical connections between the row or column lines and the display device-side electrode terminals 13 are connected through the through-holes 38 or 39 formed in the row and column substrates, therefore, Oka teaches the edge of the display panel in Fig. 6 is free of electrical connections.

8. Claims 15, 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oka and Kawano as applied to claim 14 above, and further in view of Kimura et al (US. PAT. NO. 5,253,091 hereinafter Kimura).

As to claim 15, Oka as modified by Kawano does not disclose providing contacts to the column electrodes at every other pixel. However, Figs. 4, 6-8 of Kimura teaches pixels in each column being alternately connected respectively to one column conductor. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Oka as modified by Kawano to have the contacts to column electrodes at every other pixel as taught by Kimura so as to provide a flicker-free display without increasing electric power consumption.

As to claim 16, Fig. 6 of Oka teaches the electrical connections between the row or column lines and the display device-side electrode terminals 13 are connected through the through-holes 38 or 39 formed in the row and column substrates, therefore, Fig. 6 of Oka teaches avoiding the contacts to the column electrodes along the edge region of the panel.

9. Claims 8, 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oka, Wachtler and Kawano as applied to claim 7 above, and further in view of Kimura.

As to claim 8, Oka as modified by Wachtler and Kawano does not disclose providing contacts to the column electrodes at every other pixel. However, Figs. 4, 6-8 of Kimura teaches pixels in each column being alternately connected respectively to one column conductor. Thus it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Oka as modified by Wachtler and Kawano to have the contacts to column electrodes at every other pixel as taught by Kimura so as to provide a flicker-free display without increasing electric power consumption.

As to claim 9, Fig. 6 of Oka teaches the electrical connections between the row or column lines and the display device-side electrode terminals 13 are connected through the through-holes 38 or 39 formed in the row and column substrates, therefore, Oka teaches the edge of the display panel in Fig. 6 is free of electrical connections.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Regina Liang whose telephone number is (703) 305-4719. The examiner can normally be reached on Monday-Friday from 9AM to 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Hjerpe, can be reached on (703) 305-4709.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(703) 872-9314, (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.


REGINA LIANG
PRIMARY EXAMINER
ART UNIT 2674

RL